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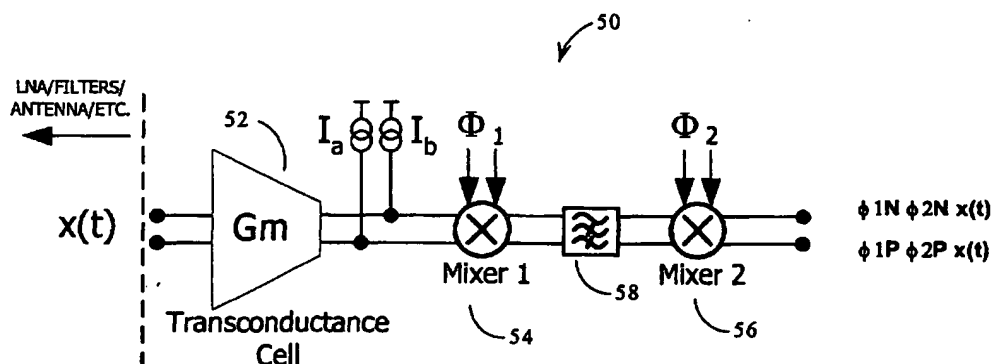
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(54) Title: DC TRIMMING CIRCUIT FOR RADIO FREQUENCY (RF) DOWN-CONVERSION



(57) **Abstract**—The present invention relates generally to communications, and more specifically to a method and apparatus for minimizing DC offset and second-order modulation products (IM2 noise) while demodulating RF signals. The principle of the invention can be applied to differential, down-conversion circuits (50) consisting of two differential mixers (54, 56) in series, as follows: a pair of current sources I_a and I_b are used to provide current to positive and negative channels of the first differential mixer (54). Providing current to the amplifying transistors of the first mixer (54) reduces the current drawn through the active mixer switches, reducing the noise generated. The current sources I_a and I_b are trimmed in a complementary manner where $I_a = I + \Delta I$, and $I_b = I - \Delta I$. The value of ΔI can be determined in a number of manners; for example, it could be established by testing after the circuit has been fabricated, and the value stored on-chip, for future use.

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